

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended) Apparatus comprising at least one absorber (C1) comprising means for withdrawing a liquid effluent (3), at least one cold separator means (D1) ~~comprising means for extracting~~ for separating a gaseous phase (8) and for feeding the ~~extracted~~ separated gaseous phase (8) to the absorber ~~(C1)~~; (C1); means for mixing at least a portion of said withdrawn liquid effluent (3) with feedstock (1), at least one cooling means (RF1) for cooling resultant mixture of said at least one portion of liquid effluent (3) and ~~feedstock~~, feedstock (3); at least one means for recycling ~~the resultant cooled mixture~~ to said cold separator; ~~said the resultant~~ cooled mixture containing feedstock and at least a portion of the liquid effluent (3) obtained from the absorber, at least one means for recovery (9, 10) of a light hydrocarbon-enriched liquid fraction obtained from said cold separator and at least one means (7) for evacuation of unabsorbed gases ~~(7)~~ from said at least one absorber (C1).

2. (Original) Apparatus according to claim 1, further comprising a fractionation column (C2) for fractionating light hydrocarbon-enriched liquid fraction (10) obtained from cold separator (D1) into at least two fractions and means for transporting said fraction (10) to said fractionation column.

3. (Previously Presented) Apparatus according to claim 1, further comprising means for withdrawing a portion of said light hydrocarbon-enriched liquid fraction (3) obtained from absorber (C1) without being recycled to cold separator (D1).

4. (Original) Apparatus according to claim 3, further comprising means for mixing light hydrocarbon-enriched liquid fractions obtained from absorber (C1) and separator (D1).

5. (Original) Apparatus according to claim 1, wherein separator (D1) is located under absorber (C1).

6. (Original) Apparatus according to claim 1, wherein separator (D1) and absorber (C1) comprise two sections that are superposed inside the same piece of equipment.

7. (Previously Presented) Apparatus according to claim 1, further comprising means for a recycling liquid fraction (10) obtained from separator (D1) and at least one cooling means (RF2) for cooling recycled liquid fraction.

8. (Previously Presented) Apparatus according to claim 1, further comprising a fractionation column (C2) for fractionating the liquid effluent obtained from cold separator (D1) into at least 3 fractions (6, 15, 22) of which one (15) constitutes at least partly a liquid phase and means for recycling said liquid phase to absorber (C1).

9. (Original) Apparatus according to claim 2, further comprising at least one exchanger (E1, E2) for exchanging heat between liquid phase (10) obtained from cold separator (D1) and liquid phase (15) recycled to absorber (C1) after fractionation in column (C2).

10. (Original) Apparatus according to claim 1, comprising at least one pump (11) for the recirculation of at least one liquid flow.

11. (Original) Apparatus according to claim 1, further comprising means for collecting the light hydrocarbon-enriched effluent directly at the outlet of cold separator (D1).

12. (Original) Apparatus according to claim 9, further comprising means for collecting light hydrocarbon-enriched effluent at a lateral output (22) of fractionation column (C2).

13. (Previously Presented) Apparatus according to claim 1, further comprising a conversion unit located upstream and in communication with said absorber (C1).

14. (Original) Apparatus according to claim 14, in which the conversion unit is a unit for hydrogenation, hydrotreatment, hydroconversion, isomerization or cracking.

15. (Previously Presented) Apparatus according claim 2, further comprising means for recycling purge gas (6) from column (C2) to absorber (C1).

16. (Previously Presented) A process for recovery of a hydrogen-rich gas in apparatus according to claim 1, comprising passing the hydrogen-rich gas as said feedstock into the cold separator.

17. (Previously Presented) A process for recovery of a hydrocarbon-enriched liquid in apparatus according to claim 1, comprising passing said hydrocarbon-enriched liquid as said feedstock into the cold separator.